brevis (Gymnodinium breve). Lastly, close coordination with the sampling, analytical and modeling activities of Drs. D. Stanley, R. Christian (E.P.A. supported Neuse River nitrogen cycling project; E.C.U.) and J. Wells (parallel Albemarle Pamlico Estuarine Study [A.P.E.S.]) project on sediment dynamics in NRE) has fostered and improved our mutual understanding of nutrient-phytoplankton interactions in the Neuse-Pamlico Sound estuarine region.

Results

In the 36 month period from November 1987 through October 1990, we completed 30 sets of field samplings, in situ bioassays and laboratory determinations. Although we originally proposed sampling intervals of 2-3 months, the dynamic nature of the estuary led us very early on in the project (December 1987), to increase the frequency of sampling to every 1 to 1.5 months.

Especially noteworthy in our findings were the seasonally and hydrodynamically-driven patterns in:

1. ambient concentrations of the potentially limiting dissolved nutrients (nitrogen and phosphorus);

2. in situ primary production characteristics (data supplied through complimentary U. N. C. Sea Grant project (RMER-10) recently completed, December 1989 (H. W. Paerl and R. Leuttich, P.I.'s);

3. nutrient enrichment bioassay results, reflecting phytoplankton production and biomass limitations by nitrogen and/or phosphorus